

WHAT IS CLAIMED IS:

1. A processing apparatus for processing a sample, comprising:

5 a process chamber for processing the sample in a predetermined atmosphere;

a load-lock chamber connected to said process chamber;

10 a transfer mechanism for transferring the sample between said load-lock chamber and another unit or container;

a clean booth which covers a transfer path of said transfer mechanism; and

a transfer atmosphere forming mechanism for flowing a clean gas in said clean booth.

15 2. The apparatus according to claim 1, wherein said transfer atmosphere forming mechanism comprises

a supply source of the gas, and

a filter inserted between said supply source of the gas and the transfer path.

20 3. The apparatus according to claim 1, wherein said transfer atmosphere forming mechanism comprises

a supply source of the gas,

a filter inserted between said supply source of the gas and the transfer path, and

25 a straightening plate for passing the gas from said filter, which has passed through the transfer path.

4. The apparatus according to claim 1, further

comprising, in said load-lock chamber, a gas control mechanism for supplying a clean gas which is the same as in said process chamber or as in said clean booth into said load-lock chamber or exhausting the gas from  
5 said load-lock chamber.

5. The apparatus according to claim 4, wherein to supply the gas which is the same as in said process chamber to said load-lock chamber, said gas control mechanism supplies the clean gas in said process  
10 chamber to said load-lock chamber, and to supply the gas which is the same as in said clean booth to said load-lock chamber, said gas control mechanism supplies the clean gas in said clean booth to said load-lock chamber.

15 6. The apparatus according to claim 4, wherein gates are arranged between said load-lock chamber and said process chamber and between said load-lock chamber and said clean booth,

in transferring the sample from said load-lock  
20 chamber to said process chamber, said gas control mechanism supplies the same clean gas as in said process chamber to said load-lock chamber before the gate between said load-lock chamber and said process chamber is opened, and

25 in transferring the sample from said load-lock chamber to said clean booth, said gas control mechanism supplies the same clean gas as in said clean booth to

said load-lock chamber before the gate between said load-lock chamber and said clean booth is opened.

7. The apparatus according to claim 1, further comprising, in said load-lock chamber, a gas control  
5 mechanism for supplying a clean gas which is the same as in said process chamber or a clean dry gas into said load-lock chamber or exhausting the gas from said load-lock chamber.

8. The apparatus according to claim 7, wherein  
10 gates are arranged between said load-lock chamber and said process chamber and between said load-lock chamber and said clean booth,

in transferring the sample from said load-lock chamber to said process chamber, said gas control  
15 mechanism supplies the same clean gas as in said process chamber to said load-lock chamber before the gate between said load-lock chamber and said process chamber is opened, and

in transferring the sample from said load-lock  
20 chamber to said clean booth, said gas control mechanism supplies the clean dry gas to said load-lock chamber before the gate between said load-lock chamber and said clean booth is opened.

9. The apparatus according to claim 1, wherein said  
25 transfer atmosphere forming mechanism forms a laminar flow of the clean gas in said clean booth.

10. The apparatus according to claim 1, further

comprising an exposure apparatus in said process chamber.

11. The apparatus according to claim 1, wherein another unit comprises a coater/developer.

5 12. A method of processing a sample, comprising the steps of:

transferring the sample to a load-lock chamber by a transfer mechanism installed in a clean booth in which a clean gas flows;

10 adjusting a pressure in the load-lock chamber and transferring the sample from the load-lock chamber into a process chamber;

processing the sample in the process chamber;

transferring the sample from the process chamber  
15 to the load-lock chamber; and

adjusting the pressure in the load-lock chamber, extracting the sample from the load-lock chamber, and transferring the sample by the transfer mechanism installed in the clean booth in which the clean gas  
20 flows.

13. A method of manufacturing a device, comprising the steps of:

transferring a substrate coated with a photosensitive agent to a load-lock chamber by a  
25 transfer mechanism installed in a clean booth in which a clean gas flows;

adjusting a pressure in the load-lock chamber and

transferring the substrate from the load-lock chamber into a process chamber;

transferring a pattern onto the substrate by an exposure apparatus installed in the process chamber;

5        transferring the substrate from the process chamber to the load-lock chamber; and

adjusting the pressure in the load-lock chamber,  
extracting the substrate from the load-lock chamber,  
and transferring the substrate by the transfer  
10 mechanism installed in the clean booth in which the  
clean gas flows.

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